



6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 151

[EPA-HQ-OLEM-2018-0024; FRL-9979-83-OLEM]

RIN 2050-AG87

Clean Water Act Hazardous Substances Spill Prevention

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed action.

SUMMARY: The Environmental Protection Agency (EPA or the Agency) is proposing to establish no new requirements under Clean Water Act (CWA), section 311. This section directs the President to issue regulations to prevent discharges of oil and hazardous substances from onshore and offshore facilities, and to contain such discharges. On July 21, 2015, EPA was sued for failing to comply with the alleged duty to issue regulations to prevent and contain CWA hazardous substance discharges. On February 16, 2016, the United States District Court for the Southern District of New York entered a Consent Decree between EPA and the litigants that required EPA to sign a notice of proposed rulemaking pertaining to the issuance of hazardous substance regulations, and take final action after notice and comment on said notice. Based on an analysis of the frequency and impacts of reported CWA HS discharges and the existing framework of EPA regulatory requirements, the Agency is not proposing additional regulatory requirements at this time. This proposed action is intended to comply with the Consent Decree and to provide an opportunity for public notice and comment on EPA's proposed approach to satisfy the CWA requirements.

DATES: Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OLEM-2018-0024, “Clean Water Act Hazardous Substances Discharge Prevention Action” at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from <https://www.regulations.gov/>. The EPA may publish any comments received on its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

FOR FURTHER INFORMATION CONTACT: Stacey Yonce, Office of Emergency Management, Mail Code 5104A, Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, (202) 564-2288, yonce.stacey@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. What is the statutory authority for this proposed action?

This proposal is authorized by section 311(j)(1)(C) of the CWA.

B. Does this proposed action apply to me?

A list of entities that could be affected by requirements established under CWA section 311(j)(1)(C) is provided in Table 1:

Table 1 - Potentially Affected Entities

Industry	NAICS
Wired and Wireless Telecommunications	51711, 51721
Oil and Gas Extraction	21111
Water Supply and Irrigation Systems	22131
Farm Supplies Merchant Wholesalers	42491
Electric Power Generation, Transmission and Distribution	2211
Support Activities for Crop Production	11511
Warehousing and Storage	4931
Food Manufacturing	311
Chemical Manufacturing	325
Other Merchant Wholesalers, Nondurable Goods	424
Mining and Quarrying	21
Utilities	22
Construction	23
Manufacturing	31-33
Wholesale and Retail Trade	42, 44-45
Transportation and Warehousing	48-49
Other	11, 51-56, 61-62, 71-72, 81, 92
NAICS = North American Industry Classification System.	

The list of potentially affected entities in Table 1 may not be exhaustive. The Agency's aim is to provide a guide for readers regarding those entities that potentially could be affected by this action. However, this action may affect other entities not listed in this table. If you have questions regarding the applicability of this action to a particular entity, consult the person(s) listed in the preceding section entitled **FOR FURTHER INFORMATION CONTACT**.

C. What is the purpose of this proposed action?

The purpose of this proposal is to provide opportunity for public notice and comment on EPA's proposed approach to satisfy the requirements of CWA section 311(j)(1)(C) pertaining to CWA hazardous substances (HS).

II. Background

A. Statutory authority and delegation of authority

CWA section 311(j)(1)(C) directs the President to issue regulations establishing procedures, methods, and equipment; and other requirements for equipment to prevent discharges of oil and HS from vessels and from onshore facilities and offshore facilities, and to contain such discharges.¹ The President has delegated the authority to regulate non-transportation-related onshore facilities and offshore facilities landward of the coastline, under section 311(j)(1)(C) of the CWA to EPA.²

B. Legislative background

The term "hazardous substance" is defined in CWA section 311(a)(14). Section 311(b)(2)(A) authorizes regulations designating HS, which when discharged in any quantity into jurisdictional waters,³ present an imminent and substantial danger to public health or welfare, including, but not limited to, fish, shellfish, wildlife, shorelines, and beaches.

¹ 33 U.S.C. 1321(j)(1)(C).

² Under Executive Order 12777(b)(1), the Department of the Interior has redelegated the authority to regulate non-transportation-related offshore facilities landward of the coastline to EPA (see 40 CFR part 112, Appendix B). A Memorandum of Understanding (MOU) between the U.S. Department of Transportation (DOT) and EPA (36 FR 24080, November 24, 1971) established the definitions of transportation- and non-transportation-related facilities. An MOU among EPA, DOI, and DOT, effective February 3, 1994, has redelegated the responsibility to regulate certain offshore facilities from DOI to EPA.

³ The CWA 311 jurisdiction applies to discharges or substantial threats of discharges into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone; in connection with activities under the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.) or the Deepwater Port Act of 1974 (33 U.S.C. 1501 et seq.); or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States [including resources under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.)] ("jurisdictional waters"). See 33 U.S.C. 1321(b)(1) and 33 U.S.C. 1321(c).

Once a chemical was designated as a CWA HS, as described in Section II.C, the corresponding quantity was established by regulation under the authority of CWA section 311(b)(4).⁴ The CWA prohibits discharges of CWA HS in quantities that may be harmful in section 311(b)(3).

C. Regulatory background

In March 1978, EPA designated a list of CWA HS in 40 CFR part 116. EPA established reportable quantities for those substances in 40 CFR part 117 in August 1979 (see, for example, 43 FR 10474, March 13, 1978; 44 FR 50766, August 29, 1979). In September 1978, EPA proposed to establish requirements for Spill Prevention, Control, and Countermeasure (SPCC) Plans to prevent CWA HS discharges from facilities subject to permitting requirements under the National Pollution Discharge Elimination System (NPDES) program of the CWA (43 FR 39276, September 1, 1978). The Agency proposed to require owners and operators to develop CWA HS SPCC Plans that included, among other things, general requirements for appropriate containment, drainage control and/or diversionary structures; and specific requirements for the proper storage of liquids and raw materials, preventive maintenance and housekeeping, facility security, and training for employees and contractors. EPA did not finalize that proposed CWA HS SPCC rule. There is no information in the record to explain the reason the 1978 proposal was not finalized.

D. Litigation background

On July 21, 2015, the Environmental Justice Health Alliance for Chemical Policy Reform, People Concerned About Chemical Safety, and the Natural Resources Defense Council

⁴ CWA section 311(b)(4) provides for the President to, by regulation, determine for the purposes of this section, those quantities of oil and any hazardous substances, the discharge of which may be harmful to the public health or welfare or the environment of the United States, including but not limited to fish, shellfish, wildlife, and public and private property, shorelines, and beaches.

filed a lawsuit⁵ against EPA for failing to comply with the alleged duty to issue regulations to prevent and contain CWA HS spills from non-transportation-related onshore facilities, including aboveground storage tanks, under CWA section 311(j)(1)(C).

On February 16, 2016, the United States District Court for the Southern District of New York entered a Consent Decree between EPA and the litigants establishing a schedule under which EPA is to sign “a notice of proposed rulemaking pertaining to the issuance of the Hazardous Substance Regulations” and take final action after notice and comment on said notice.⁶

E. Public outreach

EPA held three public meetings in 2016 to gain early input from stakeholders that EPA should consider during the rulemaking development. A public meeting was held in Charleston, West Virginia, on November 2; and two virtual public meetings were held on November 29 and December 1. EPA received input from a variety of stakeholders, including nongovernmental organizations, local governments, private citizens, and representatives from industry and trade organizations. Topics addressed in these discussions included:

- Establish spill prevention and right-to-know requirements for chemicals.
- Require secondary containment and inspections of primary and secondary containment to assure continued compliance.
- Require information about downstream public water intakes to allow prompt notification after a spill.

⁵ Complaint for Declaratory and Injunctive Relief, *Environmental Justice Health Alliance from Chemical Policy Reform v. EPA*, 15-cv-5705 (S.D.N.Y. July 21, 2015).

⁶ *Env'tl. Justice Health All. for Chem. Reform v. U.S. EPA*, No. 15-cv-05075, ECF No. 46 (S.D.N.Y. Feb. 16, 2016).

- Concerns about CBI should not prohibit notifying residents about the risks of the chemicals stored or released.
- EPA must enforce standards for them to be effective.
- A number of Federal and state regulations already require spill prevention measures and EPA should not establish redundant or conflicting requirements.

The public input received is available in the docket.⁷

F. Additional information collection

We intend to supplement the information that this action is based on with an additional information collection. This information collection would be a voluntary survey of U.S. states, tribes, and territories that would request information on the number and type of facilities with CWA HS onsite; historical discharges of CWA HS; the ecological and human health impacts of those discharges; and existing state, territory, and Tribal programs that address discharge prevention of CWA HS. EPA anticipates using the results of the survey to further inform this regulatory action.⁸

III. Proposed action

EPA is proposing no new regulatory requirements under the authority of CWA section 311(j)(1)(C) at this time. This determination is based on an analysis of identified CWA HS discharges, and an evaluation of the existing framework of EPA regulatory requirements relevant to preventing and containing CWA HS discharges.

⁷ A summary of the input is available on the EPA website at: <https://www.epa.gov/rulemaking-preventing-hazardous-substance-spills/summary-public-input-clean-water-act-cwa-hazardous>, as well as in the docket for this proposal: Docket ID #: EPA-HQ-OLEM-2018-0024.

⁸ On September 21, 2017, EPA issued a notice in the Federal Register (82 FR 44178) that identified plans to submit an information collection request (ICR) to the Office of Management and Budget (OMB) for review and approval, and provided a 60-day public comment period.

The Agency set forth to determine what regulatory requirements under CWA section 311(j)(1)(C) would be appropriate to prevent CWA HS discharges. To this end, EPA analyzed the frequency of and reported impacts of the identified CWA HS discharges.

Next, EPA identified an analytical framework of discharge prevention, containment, and mitigation provisions, or program elements, commonly found in discharge and accident prevention regulatory programs. EPA then conducted a review of existing EPA regulatory programs to determine which regulations, such as NPDES, Resource Conservation and Recovery Act (RCRA), Risk Management Program (RMP), and others include these program elements and also apply to CWA HS.

Based on the reported frequency and impacts of identified CWA HS discharges, and the Agency's evaluation of the existing framework of EPA regulatory requirements relevant to preventing CWA HS discharges, EPA has determined that the existing framework of regulatory requirements serves to prevent CWA HS discharges. Additionally, EPA identified relevant requirements in other Federal regulatory programs and determined that they further serve to prevent CWA HS discharges, providing additional support for this proposed action.

A. CWA HS discharge history and impacts analysis

1. Discharge history and reported impacts

EPA analyzed CWA HS discharges reported to the National Response Center (NRC)⁹ over a 10-year period to estimate the frequency of CWA HS discharges and to understand the reported impacts of these discharges to communities that were potentially affected.¹⁰ 40 CFR

⁹ The NRC is the designated federal point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges and releases into the environment anywhere in the United States and its territories. The NRC maintains a national database of these reports.

¹⁰ EPA recognizes that historical CWA HS discharges do not predict future incidents. EPA reviewed the CWA HS discharge history to gain insight into the frequency and impact of past CWA HS discharges.

117.21 requires immediate notification to the NRC once the person in charge of a vessel or an offshore or onshore facility has knowledge of a discharge of a designated CWA HS from the facility in quantities equal to or exceeding, in any 24-hour period, the reportable quantity.

During 2007-2016, the NRC received reports of 285,867 releases of all kinds (including for example of oil, chemical, radiological, biological to a variety of media). EPA then further analyzed the data to identify discharges of CWA HS that impacted water from facilities in EPA's regulatory jurisdiction. Based on the NRC database review¹¹ and recognizing the data limitations discussed further in Section III.A.3, EPA identified 9,416 reports of CWA HS discharges out of the total received (3.3 percent) for this time period. Of these CWA HS discharge reports, the Agency further refined the analysis by identifying 3,140 reports that were reported to have reached water (see discussion below on NRC data limitations). Within that universe, 2,491 (less than one percent of the reports) were identified as CWA HS discharges reported to have originated from non-transportation-related sources.

EPA further analyzed the NRC data to examine how many of the CWA HS discharges to water from non-transportation-related facilities had reported impacts. This information was supplemented with reported impact data for identified CWA HS discharges from the National Toxic Substance Incidents Program (NTSIP).¹² Impacts reported to NRC and NTSIP include evacuations, injuries, hospitalizations, fatalities, waterway closures, and water supply contamination. A total of 117 CWA HS discharge reports (4.7 percent) included one or more of

¹¹ This review is described in detail in the Regulatory Impact Analysis in the docket (Docket ID No. EPA-HQ-OLEM-2018-0024) for this proposed action.

¹² The Agency for Toxic Substances and Disease Registry's NTSIP collects and combines information from many resources to protect people from harm caused by spills and leaks of toxic substances. NTSIP gathers information about harmful spills into a central place. People can use NTSIP information to help prevent or reduce the harm caused by toxic substance incidents. NTSIP can also help experts when a release does occur. See <https://www.atsdr.cdc.gov/ntsip/> for additional information.

these impacts out of the 2,491 identified CWA HS discharges to water, reported as originating from non-transportation-related sources over the 10-year period analyzed.

EPA seeks comment on the approach used to analyze the frequency of CWA HS discharges and to quantify the impacts of CWA HS discharges. Specifically, EPA requests additional data sources, information, and approaches that may allow EPA to further revise or refine the estimated impacts of CWA HS discharges from non-transportation-related sources, nationally.

2. Most-frequently discharged CWA HS

In addition to determining the frequency of CWA HS discharges, EPA also analyzed the reporting data to identify the CWA HS most frequently discharged. Of 292 CWA HS currently designated in 40 CFR part 116, the following 13 CWA HS comprised the majority of identified discharges, as well as the majority of identified discharges with reported impacts (Table 2).

Table 2 - Most Frequently Discharged CWA HS

CWA HS	CAS Number	Chemical Class	# of Discharges	# w/ Impacts
Polychlorinated Biphenyls (PCBs)	1336-36-3	Organic	1,322	21
Sulfuric Acid (>80%)	7664-93-9	Acid	185	14
Sodium Hydroxide	1310-73-2	Base	147	4
Ammonia	7664-41-7	Weak Base	112	18
Benzene	71-43-2	Organic	91	8
Hydrochloric Acid	7647-01-0	Acid	91	9
Chlorine (liquid/solid)	7782-50-5	Base	81	13
Sodium Hypochlorite	7681-52-9	Base	81	1
Toluene	108-88-3	Organic	38	1
Phosphoric Acid	7664-38-2	Acid	34	0
Styrene	100-42-5	Organic	21	1
Nitric Acid (fuming)	7697-37-2	Acid	19	4
Potassium Hydroxide	1310-58-3	Base	18	0
TOTAL			2,240	94

These 13 CWA HS make up 90 percent of all identified CWA HS discharges to water from non-transportation-related facilities and 80 percent of the 117 identified CWA HS discharges with reported impacts.

3. NRC data limitations

a. Discharge history limitations

The Agency looked to the NRC database as the best readily available source of information on CWA HS discharges in the United States. However, EPA recognizes its limitations. The NRC database is based on notifications of CWA HS discharges, and thus is dependent on the reporting individuals for comprehensiveness and accuracy of the information provided.

NRC reports are generally received immediately following an incident, often before a facility has accurate and complete information about the discharge. There is no requirement to update the information reported to the NRC; sometimes, the information available in the database includes inaccuracies regarding, among others, the substance reported, the quantity reported, the source, and the nature or impacts of the discharge. Further, some discharges may not be reported to the NRC, or the NRC may be notified of discharges that do not equal or exceed the reportable quantity. EPA has no information to assess or characterize the uncertainty associated with information reported to the NRC, the extent of under-reporting (failure to report a discharge), or the extent of over-reporting (discharges reported that are not subject to notification requirements).

Furthermore, the analysis conducted focused on those discharges that impacted water, but no additional determination was conducted to determine if the waters impacted were jurisdictional.¹³

b. Discharge impact limitations

There may be additional impacts (i.e., beyond evacuations, injuries, hospitalizations, fatalities, waterway closures, and water supply contamination) from the universe of CWA HS discharges to water from non-transportation-related facilities, which were not required to be reported to the NRC and, thus, could not be quantified in this analysis. These may include the loss of productivity due to a facility or process unit shutting down as a result of a discharge, emergency response and restoration costs, transaction costs such as the cost of resulting litigation, damages to water quality, fish kills, or impacts to property values due to changes in perceived risk or reduced ecological services. EPA was not able to identify sources of data to quantify these impacts, other than the cited data from NRC or NTSIP and some limited information about fish kills that is made publicly available by a few states. The NRC and NTSIP data are discussed and analyzed in the RIA. The information EPA identified on fish kills is included in the docket.

c. Additional efforts to gather data

EPA's initial data gathering efforts for this proposed action focused on assessing the scope of historical CWA HS discharges and identifying relevant industry practices and regulatory requirements related to preventing CWA HS discharges. EPA began to develop an

¹³ Jurisdictional waters include navigable waters of the United States or adjoining shorelines, or the waters of the contiguous zone or in connection with activities under the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.) or the Deepwater Port Act of 1974 (33 U.S.C. 1501 et seq.), or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.).

information collection request (ICR) with a voluntary survey intended for facilities with CWA HS. EPA intended to collect information on current prevention practices and other facility-specific information that would inform the selection of prevention program elements for a proposed rule (e.g., storage capacity, types of storage equipment). However, EPA revised the focus of the survey after recognizing uncertainties in the estimate of the universe of potentially-subject facilities and the impacts associated with the 10-year CWA HS discharge data.

EPA intends to collect information from states to refine:

- The estimate of the universe of potentially-regulated facilities, and
- The analysis of CWA HS discharges in the 10-year period analyzed.

EPA provided notice on September 21, 2017 (82 FR 44179) of plans to submit an ICR to the OMB for review and approval of a voluntary survey intended for U.S. states, tribes, and territories. On April 10, 2018 (83 FR 15387) EPA provided notice that the ICR has been submitted to OMB for review and provided an additional 30-day public comment period.

EPA anticipates using any relevant information obtained through survey responses to further inform development of a regulatory action. If new information is received that informs the rulemaking, EPA will publish a notice to allow an opportunity for public review and comment of the information, as appropriate.

B. Analysis of existing regulatory programs

1. Program elements

The Agency assessed current discharge prevention practices and technologies based on a review of existing EPA and other Federal regulatory programs.¹⁴ To further inform this analysis,

¹⁴ Indiana's Department of Environmental Management took a similar approach when developing a report of aboveground storage tank rules and regulations. See IDEM's Report of Aboveground Storage Tank Rules and

EPA also reviewed state regulatory programs and industry standards, which are sometimes incorporated into state or Federal regulations as requirements. The purpose of this regulatory review was to identify common discharge and accident prevention, control and mitigation provisions that would serve to prevent, contain, or mitigate CWA HS discharges. EPA also analyzed past CWA HS discharges to determine what program elements could prevent or minimize impacts from these types of discharges in the future. Finally, EPA considered stakeholder input from the 2016 public meetings when identifying program elements (e.g., secondary containment and inspections, and downstream water notifications). See section II.E for a description of the early stakeholder input opportunities for this action.

EPA identified a framework of discharge prevention, containment, and mitigation provisions, or program elements, commonly found in discharge and accident prevention regulatory programs. These program elements are listed in Table 3 and discussed below and in the Background Information Document (BID).¹⁵

Table 3 - Program Elements and Associated Provisions

Program Elements	Sample Owner/Operators Requirements
Prevention Provisions	
Safety Information	Maintain and review Safety Data Sheets (SDS).
Hazard Review	Review materials and operations at a facility, identify potential CWA HS discharge scenarios, and address them. Examples of resulting hazard mitigation measures could include storage container compatibility, engineering controls (e.g., uninterrupted power source) to address expected weather events, overfill prevention, explosion-proof requirements, and facility security measures.
Mechanical Integrity	Conduct preventive maintenance inspections, including process equipment and process control equipment, and implement appropriate corrective actions within specified timeframes.

Regulations Pursuant to SEA 312; November 2015.

https://www.in.gov/ide/cleanwater/files/ast_rules_overview.pdf.

¹⁵ The analysis did not include administrative provisions, such as recordkeeping, which would normally be included in a regulatory program.

Personnel Training	Conduct initial and periodic personnel training for employees and contractors on proper facility operations, including any discharge prevention, mitigation, and response practices.
Incident Investigations	Investigate CWA HS discharge causes, identify ways to prevent recurrence, document findings, and implement appropriate corrective actions.
Compliance Audits	Review and document compliance with regulatory requirements. This could be an in-house or third-party review.
Containment Provisions	
Secondary Containment	Install and maintain secondary containment or diversionary structures to prevent a CWA HS discharge from reaching a waterway. Requirements could include specifications for size requirements, freeboard for precipitation, and imperviousness.
Mitigation Provisions	
Emergency Response Plan	Develop an emergency response plan that includes information and procedures needed in the event of a discharge to mitigate the impacts of the discharge, ensure the safety of responders and facility personnel, and to notify potential receptors.
Coordination with State and Local Responders	Coordinate with state and local responders on response and notification procedures prior to a CWA HS discharge.

A summary of the program elements is included below.

a. Safety information

As part of prevention planning, owners/operators should maintain and review safety information about the chemicals they handle and the equipment involved in their operations. Knowledge and understanding of this information could serve to maintain overall safe operations, reducing the potential for CWA HS discharges. Chemical safety information, for example, would be useful when conducting a hazards review, developing a mechanical integrity program, or developing training materials for equipment operators.

Examples of safety information include SDS, as well as manufacturers' specifications for operating equipment. A safety information program element ensures that facility personnel have information to help them understand the safety-related aspects of their materials, equipment, and processes; and recognize the limits that are placed on their operations.

b. Hazard review

The hazard review process is intended to identify potential chemical or operational hazards present in a process. The task of identifying potential hazards could inform changes in operations that would prevent CWA HS discharges. A hazard review could provide information key to the proper design, construction, and operation of facility equipment/systems (e.g., identifying a risk of corrosion that can be mitigated by ensuring compatibility of the container with the stored material) or choosing engineering controls (e.g., identifying a risk of overfilling may lead to installing alarms or an automatic shutoff mechanism, installing an uninterrupted power supply in case of loss of power). Hazard review program provisions could be designed to focus facilities on identifying process hazards that may cause a discharge in order to control or prevent these discharges.

c. Mechanical integrity program

Process equipment widely varies and may include, for example, containers, piping, valves, pumps, loading racks, reactors, control systems, vents or relief devices, wastewater treatment systems, or other equipment that could be potential sources of CWA HS discharges. Facilities develop and implement mechanical integrity programs to ensure proper equipment operation and maintenance, which not only serve to prevent CWA HS discharges, but can also ensure operational reliability and safe operation at a facility.

Mechanical integrity provisions may include procedures for inspections (e.g., inspect pressure relief valves, gasket and seal integrity), testing, and appropriate corrective action by qualified personnel to prevent equipment failures before they cause a discharge. Specific to the prevention of CWA HS discharges, mechanical integrity provisions may, for example, serve to avoid equipment leaks and container failures. Failure of operational equipment (e.g., pumps or

tanks) or instrumentation (e.g., overfill alarms) can weaken active prevention measures and result in CWA HS discharges.

d. Personnel training

Training programs for employees and/or contractors help ensure they are aware of proper and/or safe operating procedures, chemical hazards, discharge prevention and containment measures, and response procedures. A training program aims to reduce operator errors that could lead to CWA HS discharges and educate operators on the proper implementation of discharge prevention measures.

Personnel training can also strengthen the implementation of other program elements, such as hazard review or mechanical integrity, by helping employees understand operational procedures established by those program elements. Training programs may include specific prevention and response procedures, which have been developed to prevent, contain, and mitigate CWA HS discharges; or include more general provisions for the safe and proper operation of equipment to prevent accidents due to operator error.

e. Incident investigations

Incident investigations examine the causes of a discharge after it has occurred. Lessons learned from incident investigations can then be applied to inform future prevention activities, and may result in improvements to operational methods, process design, or preventative maintenance procedures with the goal of preventing future CWA HS discharges. Incident investigation requirements may include conducting the investigation, documenting the findings, developing procedures to address the findings, and sharing the results with relevant employees.

Incident investigation provisions applicable to CWA HS discharges may serve to document findings of a discharge and implement appropriate corrective actions aimed at

preventing future discharges. For example, depending on the identified cause of a CWA HS discharge, one-time corrective actions could be implemented (e.g., installing an engineering control), or a programmatic or management approach could be implemented through another program element (e.g., changes to a preventive maintenance inspection schedule under the mechanical integrity program, or changes to employee training materials).

f. Compliance audits

Compliance audits serve as a mechanism to evaluate and measure a facility's compliance with regulatory requirements. An audit reviews a facility's operations and practices to determine whether or not applicable regulatory requirements are being met. Compliance audits identify deficiencies and opportunities for improvement, and may be accomplished by in-house personnel or by an outside third party. A compliance audit could be accomplished by a Professional Engineer or other person with liability/professional standards and knowledge of the specific processes and applicable regulations.

A compliance audit provision could provide facility management with a mechanism for oversight of implementation of CWA HS discharge prevention practices, and could include reports documenting the audit and follow-up actions.

g. Secondary containment

When properly designed and maintained, secondary containment systems can prevent discharges to jurisdictional waters. Secondary containment provisions could include dikes, berms, diversionary structures, sumps, spill kits, or other means of preventing discharges of CWA HS into jurisdictional waters. Secondary containment systems provide a second line of defense in the event of a failure of the primary containment, such as bulk storage containers, plant equipment, portable containers, or piping. Secondary containment design considerations

may include passive or active measures, appropriate volumes, impermeability of containment structures, and freeboard for precipitation.

Secondary containment provisions for CWA HS equipment could require, for example, specific sizing requirements for a worst-case discharge (e.g., construction of secondary containment sized to contain a CWA HS discharge from the largest container) or a typical discharge incident (based on a most-likely scenario); design specifications to address impervious construction; maintenance provisions, including inspections to ensure the designed capacity is maintained (e.g., by removing rainwater or other debris); and corrective actions to ensure that inspection results are addressed.

h. Emergency response plan

Emergency response plans describe immediate response actions to be taken after a CWA HS discharge in order to mitigate the impacts of the discharge, and may include key information that could be quickly accessed when needed. These plans identify not only the steps to be taken by facility personnel to mitigate the severity and environmental impacts of a discharge, to make appropriate notifications to local, state and Federal authorities, and also typically includes safety information to protect employees and emergency responders. Including an emergency response plan as part of a prevention program is complementary, since it requires facility owners/operators to proactively (i.e., in advance of the discharge) gather information and develop immediate actions to be initiated quickly following a CWA HS discharge. Additional considerations for emergency response plans may include procedures for notifying potential receptors of the CWA HS discharge or requirements to have ready access to information about proper medical treatment for ingestion of CWA HS that impact drinking water supplies.

i. Coordinating emergency response plan with state and/or local responders

Coordination between facility personnel and state and/or local responders on the content of the facility's emergency response plan allows for an information exchange that can improve emergency responders' understanding of the potential hazards onsite and ensure an effective response following a discharge.

For example, Local Emergency Planning Committees (LEPCs) include representatives from the local community (including elected state and local officials; police, fire, civil defense, and public health professionals; facility representatives; and community group representatives). LEPCs develop an emergency response plan for the community, and provide information about chemicals in the community to citizens. Where there is no active LEPC, different entities such as fire departments, emergency management agencies, police departments, or public health agencies may be planning and/or assisting in an incident response.

Coordination with state and local responders prior to a CWA HS discharge could help mitigate the impacts of a CWA HS discharge (e.g., allow for a timely shutdown of downstream drinking water intakes). Provisions could require facility personnel to share their emergency response plans with the appropriate local or state entities that would respond in the event of a CWA HS discharge. This could include an LEPC, as well as other local authorities in charge of coordinating source water protection for public drinking water systems or for other receptors.

2. Existing regulatory requirements

EPA analyzed the Federal programs and corresponding regulations identified in Table 4, focusing on these program elements, to better understand the existing regulatory requirements, practices, and technologies currently used at facilities to prevent CWA HS discharges. These regulatory programs were selected because they include discharge or accident prevention requirements and were identified as regulating at least some CWA HS; or regulating at least

some facilities that produce, store, or use CWA HS. For example, the SPCC rule in 40 CFR part 112 was reviewed because more than 50 percent of the 2,491 identified CWA HS discharges in the NRC data were discharges of PCBs, reported as present in transformer oil. Storage and handling of transformer oil is subject to the SPCC rule when a facility meets the applicability criteria of 40 CFR part 112.

Table 4 - Reviewed Federal Programs and Corresponding Regulations

Federal Programs/Regulations	Authorizing Statute	Code of Federal Regulations Citation
EPA		
NPDES Multi-Sector General Permit (MSGP) for Industrial Stormwater (2015)	CWA	40 CFR part 122
RMP Rule	Clean Air Act (CAA)	40 CFR part 68
SPCC Rule	CWA	40 CFR part 112
Pesticide <ul style="list-style-type: none"> • Pesticide Management and Disposal • Worker Protection Standard 	Federal Insecticide, Fungicide, and Rodenticide Act	40 CFR part 165 40 CFR part 170
RCRA <ul style="list-style-type: none"> • For Generators of Hazardous Waste • For Hazardous Waste Treatment, Storage, and Disposal Facilities 	Resource Conservation and Recovery Act (RCRA)	40 CFR part 262 40 CFR parts 264 and 265
Requirements for Underground Storage Tanks (USTs)	RCRA	40 CFR part 280
EPCRA <ul style="list-style-type: none"> • Emergency Planning and Notification • Hazardous Chemical Reporting 	Emergency Planning and Community Right-to-Know Act (EPCRA)	40 CFR part 355 40 CFR part 370
Pulp, Paper, and Paper Board Effluent Guidelines	CWA, CAA	40 CFR part 430
Occupational Safety and Health Administration (OSHA)		
OSHA <ul style="list-style-type: none"> • Process Safety Management (PSM) • Hazardous Waste Operations and Emergency Response (HAZWOPER) • Hazard Communication Standard (HCS) • Emergency Action Plans (EAPs) 	Occupational Safety and Health Act	29 CFR part 1910
Mine Safety and Health Administration (MSHA)		

MSHA Regulations	Federal Mine Safety and Health Act (Mine Act)	30 CFR parts 46-48, 50, 56-57
Department of Transportation Programs		
Pipeline Hazardous Materials Safety Administration (PHMSA) Regulations	Hazardous Materials Transportation Act (HMTA)	49 CFR parts 171-185
Department of Interior/Office of Surface Mining Reclamation and Enforcement (OSMRE)		
Surface Mining Control and Reclamation Act (SMCRA) Requirements	SMCRA	30 CFR parts 700-999

a. NPDES MSGP for industrial stormwater (2015)

The CWA NPDES Permit Program, authorized by the CWA, controls water pollution by regulating point sources that discharge pollutants into waters of the United States. An NPDES permit establishes limits on what can be discharged, monitoring and reporting requirements, and other provisions to protect water quality. In essence, the permit translates general requirements of the CWA into specific provisions tailored to the operations of the facility discharging pollutants. Regulations at 40 CFR 122.26(b)(14)(i)-(xi) require stormwater discharges associated with specific categories of industrial activity to be covered by NPDES permits, unless otherwise excluded. An NPDES general permit may be written to establish requirements that apply to eligible facilities with similar operations and types of discharges that obtain authorization to discharge under the general permit. Many states are currently authorized to issue NPDES permits for industrial stormwater.

This review focused on the provisions in one industrial stormwater general permit, the Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, issued by EPA in 2015.¹⁶ The MSGP is a general permit that is available to facilities that do not

¹⁶ EPA focused on stormwater permits for this review because the requirements apply where stormwater from an industrial property has the potential to discharge to a waterway. The MSGP's requirements apply to all pollutants present in the regulated stormwater discharge, including all toxic pollutants, conventional pollutants, and non-

discharge to a state with NPDES permitting authority. Because many states model their industrial stormwater permits after EPA's permit, it was used to identify prevention requirements likely to be present in NPDES industrial stormwater permits issued by states.

NPDES stormwater permits for industrial activity contain effluent limits that correspond to required levels of technology-based and water quality-based controls for discharges (CWA 402(p)(3)(A)). In the MSGP, most of the effluent limits are expressed as non-numeric pollution prevention or best management practice (BMP) requirements for minimizing the pollutant levels in the discharge (40 CFR 122.44(k)). To identify existing requirements relevant to preventing CWA HS discharges, EPA focused on non-numeric effluent limitations in Section 2 of the permit, including good housekeeping and maintenance requirements, and Stormwater Pollution Prevention Plan requirements in Section 5 of the MSGP.

The 2015 MSGP for Industrial Stormwater includes discharge prevention and response measures to minimize stormwater contamination (see part 2.1.2.4 of the MSGP). These requirements include plainly labeling containers susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur; and implementing procedures for material storage and handling, including the use of secondary containment and barriers between material storage and traffic areas, or a similarly effective means designed to prevent the discharge of pollutants from these areas.

Applicability criteria. The industrial sectors and activities covered by the MSGP are listed in Appendix D of the permit, while another version of that list of industries is included in Appendix N. The permit is meant to control and minimize pollutants in stormwater discharges associated with specific categories of industrial activities. This permit is available only to

conventional pollutants. As such, the MSGP controls what this notice refers to as CWA HS. Further, the MSGP permit is representative of stormwater permits in general.

facilities that meet the eligibility criteria described in the MSGP where EPA is the permitting authority. Regulated facilities under the jurisdiction of authorized states are expected to be subject to similar provisions in a state-issued NPDES permit.

The term “pollutant” is defined at 40 CFR 122.2 as “dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials [except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)], heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.” The definition of pollutant is considered to include all CWA HS.

Equipment or operations at which requirements apply. The permit’s requirements apply to discharges of stormwater from activities and areas at a regulated industrial plant, including industrial processes and activities such as material handling, material storage, and equipment maintenance and cleaning.

b. RMP rule (40 CFR part 68)

The Chemical Accident Prevention Provisions, also known as the RMP Rule, require facilities that use certain listed, regulated substances to develop and implement a RMP. The RMP Rule is authorized by the Clean Air Act (CAA). Regulated facilities are also required to develop an RMP, which must identify the potential effects of a chemical accident, identify steps the facility is taking to prevent an accident, and spell out emergency response procedures should an accident occur. Regulated facilities must submit a single RMP for all covered processes at the facility; these plans must be revised and resubmitted every five years.

Applicability criteria. The RMP requirements apply to facilities (stationary sources) that manufacture, use, store, or otherwise handle more than a threshold quantity of a regulated

substance in a process. The RMP Rule provides a List of Regulated Substances under section 112(r) of the CAA. The 140 RMP-regulated substances, and their threshold quantities, are listed at 40 CFR 68.130. The list includes 77 acutely toxic chemicals that can cause serious health effects or death from short-term exposures, as well as 63 flammable gases and highly volatile flammable liquids that have the potential to form vapor clouds and explode or burn if released. RMP-regulated substances include some CWA HS. The rule defines three program levels based on the processes' relative potential for public impacts and the level of effort needed to prevent accidents. For each program level, the rule defines requirements that reflect the level of risk and effort associated with the processes at that level. As a result, different facilities covered by the regulation may have different requirements depending on their processes.

Equipment or operations at which requirements apply. The RMP requirements apply to facilities that have more than a threshold quantity of a regulated substance in a process. Therefore, the requirements in the rule apply to processes. A process means any activity involving a regulated substance including any use, storage, manufacturing, handling, or onsite movement of such substances, or combination of these activities. For example, 40 CFR 68.25 requires that, for each process at the stationary source, the facility owner/operator analyze and report worst-case release scenarios.

c. SPCC rule (40 CFR part 112)

The portion of the Oil Pollution Prevention regulation known as the SPCC Rule, authorized by the CWA, is designed to protect public health, public welfare, and the environment from potential harmful effects of oil discharges to navigable waters or adjoining shorelines. The SPCC Rule requires certain facilities that could reasonably be expected to discharge oil in quantities that may be harmful into jurisdictional waters or adjoining shorelines to develop and

implement SPCC Plans. Subparts A through C of 40 CFR part 112 are often referred to as the SPCC Rule. The SPCC Plan includes several elements to prevent oil spills, including a facility diagram, oil discharge predictions, secondary containment or diversionary structures, overfill prevention, requirements for inspections, transfer procedures, personnel training, and a five-year plan review.

Applicability criteria. The SPCC Rule applies to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which, due to its location, could reasonably be expected to discharge oil in quantities that may be harmful. The rule applies to facilities with an aboveground storage capacity of more than 1,320 gallons of oil (except farms¹⁷), or a completely buried storage capacity of more than 42,000 gallons of oil. The rule has a number of exemptions, such as an exemption for containers used for wastewater treatment.

While the SPCC Rule applies only to oil, it regulates oil mixed with other substances, including a CWA HS. The definition of oil can be found in 40 CFR 112.2: “Oil means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.”

Equipment or operations at which requirements apply. Some SPCC requirements apply facility-wide and some apply to specific equipment. For example, 40 CFR 112.7(f) requires that

¹⁷ Farms are exempt under two circumstances: (1) if the farm has less than 6,000 gallons of aboveground storage and no reportable oil discharge history; or (2) has 2,500 gallons or less of aboveground storage, regardless of reportable oil discharge history.

all oil-handling personnel must be trained in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and the contents of the facility SPCC Plan. Alternatively, the integrity testing and inspection provisions found at 40 CFR 112.8(c)(6) apply to bulk storage containers.

d. Pesticide management regulation (Pesticide Management and Disposal, 40 CFR part 165)

The Pesticide Management and Disposal regulation establishes standards for pesticide containers and repackaging as well as label instructions to ensure the safe use, reuse, disposal, and adequate cleaning of the containers. Pesticide registrants and refillers (who are often distributors or retailers) must comply with the regulations, and pesticide users must follow the label instructions for cleaning and handling empty containers. Specifically, the Pesticide Management Regulation at part 165 establishes standards and requirements for pesticide containers, repackaging pesticides, and pesticide containment structures (§165.1). Twenty-one states implement pesticide containment regulations in lieu of federal containment regulations in 40 CFR part 165.

Applicability criteria. The requirements apply to chemicals that meet the definition of pesticide. One hundred and nine designated CWA HS may be used as pesticides subject to the 40 CFR part 165 FIFRA requirements.

Equipment or operations at which requirements apply. Most requirements in 40 CFR part 165 apply to containers and pesticide manufacturers are responsible for meeting these requirements. For example, 40 CFR 165.25(a) and 165.45(a) require pesticide containers to meet certain DOT packaging requirements even if the pesticide is not a DOT hazardous material.

Similarly, §165.65(e) requires visual inspection of a refillable container before repackaging a pesticide product into it, to determine whether the container meets the necessary criteria with respect to continued container integrity, required markings, and openings.

The regulation also includes requirements that apply to the area where stationary containers are stored and/or pesticide dispensing areas. For example, 40 CFR 165.85 provides design and capacity requirements for secondary containment structures at these areas. The requirements at §165.90(a)(1) further state that containment structures must be managed in a manner that prevents pesticides or materials containing pesticides from escaping from the containment structure.

e. Pesticide worker protection standard (Pesticide Agricultural Work Protection Standard, 40 CFR part 170)

FIFRA regulates worker safety through Workplace Protection Standards in 40 CFR part 170. Farms, forests, nurseries, and greenhouses that handle pesticides used to produce agricultural plant crops must adopt workplace practices designed to reduce or eliminate exposure to pesticides, and must follow procedures for responding to exposure-related emergencies.

Applicability criteria. The requirements apply to chemicals that meet the definition of pesticide. One hundred and nine designated CWA HS may be used as pesticides subject to the 40 CFR part 165 FIFRA requirements.

Equipment or operations at which requirements apply. The Worker Protection Standard requirements in 40 CFR part 170 apply to employers of pesticide workers and handlers. For example, 40 CFR 170.501 requires employers to provide training to all pesticide handlers (who mix, load, and apply agricultural pesticides) every 12 months.

f. RCRA generators regulation (Standards Applicable to Generators of Hazardous Waste, 40 CFR part 262)

This RCRA Rule establishes cradle-to-grave hazardous waste management standards for generators of hazardous waste as defined by §260.10. These generator regulations ensure that hazardous waste is appropriately identified and handled in a manner that protects human health and the environment, while minimizing interference with daily business operations.

The rule sets forth a process for generators of solid waste to determine if their wastes are hazardous, and for generator category determination (based on the amount of hazardous waste generated each month). It provides manifest requirements, pre-transport (e.g., packaging, labeling) requirements, and recordkeeping and reporting requirements for both small and large quantity generators. Some generators are also subject to preparedness, prevention, and emergency response requirements.

Applicability criteria. The RCRA Generators Regulation applies to generators of hazardous waste. Hazardous wastes, defined in §261.3, may include specifically “listed” hazardous wastes, or “characteristic” hazardous wastes evaluated based on four criteria (ignitability, corrosivity, reactivity, and toxicity). Some listed hazardous wastes are CWA HS (e.g., toluene), and some CWA HS would meet criteria for characteristic hazardous wastes at certain concentrations if the CWA HS were present as waste. RCRA regulations apply only to waste materials (as opposed to raw materials or intermediate products). This rule establishes different requirements for very small, small, and large quantity generators of hazardous waste.

Equipment or operations at which requirements apply. Some provisions apply to facility areas. For example, 40 CFR 262.252 requires that all subject areas must be equipped with an internal communications or alarm system, a device to summon emergency assistance, portable

fire extinguishers and other fire/spill control equipment, and adequate volumes of water or foam-producing equipment. Other provisions apply to packages. For example, §262.31 requires that the generator must label each package of hazardous waste in accordance with the applicable DOT regulations on hazardous materials (49 CFR part 172).

g. RCRA TSD regulations (Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, 40 CFR parts 264 and 265)

The purpose of the RCRA Treatment, Storage, and Disposal Facilities (TSDF) Standards is to establish minimum national standards for the acceptable management of hazardous waste.

Part 264 applies to permitted TSDFs, while part 265 applies to interim status facilities. Both parts 264 and 265 provide general facility and unit-specific operating requirements to assure that a facility is operated in a manner that is protective of human health and the environment.

Applicability criteria. The standards apply to owners and operators of facilities that treat, store, or dispose of hazardous waste. Hazardous waste is defined in §261.3. Hazardous wastes may include specifically “listed” hazardous wastes; or “characteristic” hazardous wastes, which are identified as hazardous based on four criteria (ignitability, corrosivity, reactivity, and toxicity.) Some listed hazardous wastes are CWA HS (e.g., toluene); and some CWA HS would meet criteria for characteristic hazardous wastes at certain concentrations, if the CWA HS were being discarded and thus a waste. A facility includes all contiguous land, structures, and appurtenances on or in the land used for treating, storing, or disposing of hazardous waste.

Equipment or operations at which requirements apply. The standards in 40 CFR parts 264 and 265 include facility-wide requirements, such as good housekeeping provisions, as well as unit-specific design and operating criteria. A single facility may consist of several types of

operational units (e.g., containers, tank systems, surface impoundments, waste piles, landfills, incinerators). The unit-specific technical requirements are designed to prevent the release of hazardous waste into the environment. For example, §264.184 includes container-specific requirements governing design and operating requirements for storage area containment systems.

h. UST rule (Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks, 40 CFR part 280)

UST regulations, authorized by RCRA, are intended to reduce the chance of releases from USTs, detect leaks and spills when they do occur, and secure a prompt cleanup. The regulations require owners and operators to properly install UST systems and protect their USTs from spills, overfills, and corrosion; they also require correct filling practices to be followed. In addition, owners and operators must report new UST systems, suspected releases, and UST system closures; and they must keep records of operation and maintenance.

Applicability criteria. These requirements are specific to UST systems greater than 110 gallons in capacity that store either petroleum or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances. All designated CWA HS are also defined as CERCLA hazardous substances. Specific parts of the regulation (e.g., §280.42) apply to hazardous substance UST systems and petroleum UST systems, both defined in 40 CFR 280.12.

Equipment or operations at which requirements apply. Some requirements apply to equipment. For example, the compatibility requirements at 40 CFR 280.32 state that UST systems must be made of or lined with materials that are compatible with the substance stored in the UST system. Other requirements apply to areas or processes. For example, areas directly

surrounding the tanks are protected by requirements such as the spill and overfill control measures in § 280.30, which calls for the constant monitoring of transfer operations.

i. EPCRA planning rule (Emergency Planning and Notification, 40 CFR part 355)

The EPCRA planning rule requires regulated facilities to provide information necessary for developing and implementing state and local emergency response plans. It also requires emergency notification in the event of a release of a regulated chemical. The facility owner/operator must designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator, and provide notice to the LEPC (§355.20(b)).

Applicability criteria. The emergency planning requirements in 40 CFR part 355 apply to facilities with an extremely EHS onsite in amounts equal to or greater than its designated threshold planning quantity (TPQ). EHS is defined in Appendices A and B of 40 CFR part 355. EHS include 65 substances, all of which are also designated as CWA HS.

The emergency release notification requirements in 40 CFR part 355 apply to facilities that produce, use, or store a hazardous chemical, and that also release a reportable quantity of either an EHS or a CERCLA hazardous substance as defined by CERCLA. All CWA HS are defined as CERCLA hazardous substances.

Equipment or operations at which requirements apply. These requirements apply to an entire facility.

j. EPCRA reporting rule (Hazardous Chemical Reporting: Community Right to Know, 40 CFR part 370)

The EPCRA reporting rule establishes reporting requirements for facilities to provide state and local officials with information on hazardous chemicals present at the facility. The information submitted by the facilities must also be made available to the public.

Applicability criteria. This rule applies to facilities that are required by the OSHA HazCom regulation to have an SDS available, and handle or store hazardous chemicals in quantities that equal or exceed the following thresholds:

- For EHS, either 500 pounds or the TPQ, whichever is lower. EHS is defined in Appendices A and B of 40 CFR part 355.
- For all other hazardous chemicals, 10,000 pounds. A hazardous chemical is defined by OSHA HazCom at 29 CFR 1910.1200(c) and §1910.1200(c) defines chemical. This definition includes all CWA HS.

Equipment or operations at which requirements apply. The hazardous chemical reporting requirements in 40 CFR part 370 apply to individual chemicals rather than process equipment. For example, regulated facilities must submit an SDS for the subject chemicals to the LEPC, the State Emergency Response Commission (SERC), and the local fire department as described in §§370.30 to 370.33.

k. Pulp and paper effluent guidelines (Pulp, Paper and Paperboard Effluent Guidelines, 40 CFR part 430)

The requirements at 40 CFR part 430 were promulgated as part of the “Cluster Rule” for the Pulp, Paper, and Paperboard Industry; are authorized by the CWA and CAA; and establish requirements under multiple statutes for multiple environmental media. The Cluster Rule was included in EPA’s review of existing requirements because it includes BMPs for spent pulping

liquor, soap, and turpentine in §430.03, which includes spill prevention and control measures and the requirement to develop a BMP Plan.

Applicability criteria. These requirements apply to any pulp, paper, or paperboard mill that discharges or may discharge process wastewater pollutants to the waters of the United States; or that introduces or may introduce process wastewater pollutants into a publicly owned treatment works.

The relevant BMPs apply specifically to direct and indirect discharging pulp, paper, and paperboard mills with pulp production in Subparts B and E of part 430 in order to prevent spills and leaks of spent pulping liquor, soap, and turpentine. Subparts B (Bleached Papergrade Kraft and Soda) and E (Papergrade Sulfite) define effluent limitations for a limited number of CWA HS.

Equipment or operations at which requirements apply. The requirements apply to pieces of equipment and process areas. For example, 40 CFR 430.03(c)(2)(i) requires regular visual inspections of process areas with equipment items in spent pulping liquor service. As another example, under 40 CFR 430.03(c)(4), the mill must establish a program of initial and refresher training of operators, maintenance personnel, and other technical and supervisory personnel who have responsibility for operating, maintaining, or supervising the operation and maintenance of equipment items in spent pulping liquor, soap, and turpentine service.

1. Other Federal programs

Although the analysis of existing EPA regulations is the basis for this proposal, EPA reviewed other Federal regulations with prevention requirements that may be applicable to CWA HS. For more information about these requirements, see Background Information Document: Review of Relevant Federal and State Regulations; Docket ID #: EPA-HQ-OLEM-2018-0024.

- OSHA Regulations
 - Emergency Action Plans (EAPs), 29 CFR 1910.38
 - Process Safety Management of Highly Hazardous Chemicals (PSM), 29 CFR 1910.119
 - Hazardous Waste Operations and Emergency Response (HAZWOPER), 29 CFR 1910.120
 - HazCom, 29 CFR 1910.1200
- Mine Safety and Health Administration (MSHA) Regulations
 - Training and Retraining of Miners Engaged in Shell Dredging or Employed at Sand, Gravel, Surface Stone, Surface Clay, Colloidal Phosphate, or Surface Limestone Mines (Training, Sand and Gravel Mines), 30 CFR part 46
 - Hazard Communication (HazCom), 30 CFR part 47
 - Training and Retraining of Miners (Training), 30 CFR part 48
 - Notification, Investigation, Reports and Records of Accidents, Injuries, Illnesses, Employment, and Coal Production in Mines (Accident Notification), 30 CFR part 50
 - Safety and Health Standards – Surface Metal and Nonmetal Mines, 30 CFR part 56
 - Safety and Health Standards – Underground Metal and Nonmetal Mines, 30 CFR part 57
- Pipeline and Hazardous Materials Safety Administration (PHMSA) Hazardous Materials Regulations, 49 CFR parts 171–185

- Surface Mining Control and Reclamation Act of 1977 (SMCRA) Regulations, 30 CFR parts 700–999

m. State programs and industry standards

EPA also identified state regulatory programs,¹⁸ which regulate the proper handling and storage of chemicals to prevent accidents and discharges, and industry standards that establish technology standards and recommend practices prudent for proper operation and maintenance. A review of these state programs and industry standards is presented in the BID.

3. Regulatory coverage of the nine program elements

EPA cross-referenced the regulatory requirements for the Federal programs in *Table 4 – Reviewed Federal Programs and Corresponding Regulations* with the nine program elements in *Table 3 -Program Elements and Associated Provisions* to identify existing regulatory programs that include discharge prevention, control, and mitigation provisions. The relevance of each EPA/Federal program and corresponding regulations to the cross-referenced program elements and their associated provisions is summarized in *Table 5 - Review of EPA and Other Federal Regulations for Program Elements*, and is discussed in detail in the BID available in the docket for this proposal.¹⁹ For each regulatory program, this high-level analysis documents provisions related to each of the nine program elements identified.

The analysis indicates that, for all nine program elements, there are existing cumulative EPA regulatory requirements under various programs for accident and discharge prevention relevant to CWA HS. Similarly, existing cumulative requirements under Federal regulatory programs administered by other Federal agencies and departments (i.e., OSHA, MSHA,

¹⁸ Fourteen states have regulatory programs; multiple programs in the same state are noted in parentheses: CA (3), DE, GA, IL, IN (2), ME, MA (2), MI, MN, NJ, NY, OR, PA, and WV.

¹⁹ See *Background Information Document: Review of Relevant Federal and State Regulations*; Docket ID #: EPA-HQ-OLEM-2018-0024.

PHMSA, and OSMRE) reflect, under various accident and discharge prevention programs, all nine program elements. This information is summarized in detail in the BID. For example, Table 5 - *Review of EPA and Other Federal Regulations for Program Elements* shows that hazard review and emergency response planning provisions are the two most frequently addressed program elements; these were identified in seven of eight EPA regulations and in all of the other Federal programs reviewed.

Table 5 - Review of EPA and Other Federal Regulations for Program Elements

	Program Elements ^a								
	Safety Information	Hazard Review	Mechanical Integrity	Personnel Training	Incident Investigations	Compliance Audits	Secondary Containment	Emergency Response Plan	Emergency Response Plan with State/Local Coordinating
EPA Programs/Regulations									
NPDES MSGP for Industrial Stormwater (2015)		✓	✓	✓			✓	✓	
RMP	✓	✓	✓	✓	✓	✓		✓	✓
SPCC		✓	✓	✓	✓		✓	✓	
Pesticide Management		✓	✓				✓		
Pesticide Worker Protection Standard	✓			✓				✓	
RCRA Generators		✓	✓	✓			✓	✓	✓
RCRA TSD		✓	✓	✓			✓	✓	✓
UST		✓	✓	✓			✓	✓	
EPCRA Planning								✓	✓
EPCRA Reporting	✓	✓							
Pulp, Paper, and Paper			✓	✓	✓		✓		

Board Effluent Guidelines									
Other Federal Regulations									
OSHA EAP								✓	
OSHA PSM	✓	✓	✓	✓	✓	✓		✓	
OSHA HAZWOPER		✓		✓			✓	✓	✓
OSHA HazCom	✓			✓					
MSHA	✓	✓		✓	✓		✓	✓	
PHMSA Hazardous Material	✓	✓	✓	✓	✓			✓	✓
SMCRA		✓	✓				✓	✓	
^a A check mark (“✓”) indicates that the regulatory program includes provisions addressing at least one sub-element of the program element.									

The analysis focused on those provisions within the existing EPA, and other Federal, regulatory framework that address to varying degrees, either directly or indirectly, the identified program elements for CWA HS. The compliance auditing program element is addressed by one EPA regulatory program (RMP) and one other Federal regulation (the OSHA Process Safety Management standard). Mechanical integrity and personnel training are addressed by seven of eight EPA programs and by three of the other Federal programs reviewed. Secondary containment provisions are included in six of eight EPA regulations and three additional Federal programs reviewed. The remaining program elements (i.e., safety information; incident investigations; and coordination with state and local responders) are addressed by approximately half of the Federal regulations reviewed.

The BID provides details on how each program element is addressed by both EPA regulations and other Federal programs. A summary of the EPA regulations, that serve as the basis for this proposal, is provided below.

a. Safety information

Of the 11 EPA regulations reviewed, three programs include requirements to identify safety information for chemicals used or stored on-site – the Pesticide Worker Protection Standard, the RMP Rule and the EPCRA Reporting Rule.

The Pesticide Worker Protection Standard requires agricultural establishments to display safety data sheets for the pesticides that have been applied on the establishment and to keep the SDSs in records for two years.

The RMP Rule requires owners or operators to compile and maintain general safety information, including: an SDS, maximum intended inventory of equipment in which the regulated substances are stored or processed, and safe operation conditions. The RMP rule also requires owners to compile process safety information for regulated substances, such as toxicity information.

The EPCRA Reporting Rule, which establishes Tier I and Tier II reporting requirements, requires regulated facilities to submit identifying information, either as an SDS or a list of hazardous substances grouped by specific hazards, for hazardous substances. In addition, an inventory of the chemicals for the preceding calendar year must be submitted to the facility's State Emergency Response Commission (SERC), LEPC, and local fire department.

b. Hazard review

Eight EPA regulations reviewed include requirements for facilities to conduct a hazard review or identify hazards:

- MSGP for Industrial Stormwater;
- RMP Rule;
- SPCC Rule;
- Pesticide Management Regulation;

- RCRA Generators Regulation;
- RCRA TSD Regulations;
- UST Rule; and
- EPCRA Reporting Rule

The program element or sub-elements most commonly required by EPA programs are identification of engineering or administrative controls and/or a requirement for equipment/containers to be constructed in accordance with standards (six regulatory programs), requirement for compatibility of stored materials with tanks and equipment (five regulatory programs), and overfill prevention (six programs).

A general hazard review and identification of process hazards is required by four EPA regulatory programs – the 2015 MSGP for Industrial Stormwater, RMP Rule, SPCC Rule and RCRA TSD Regulations. Four programs, the MSGP for Industrial Stormwater, SPCC Rule, RCRA TSD Regulations and EPCRA Reporting Rule, require description of process technology or equipment for risk identification. The 2015 MSGP for Industrial Stormwater requires permitted facilities to assess potential hazards, implement control measures to minimize discharge based on identified hazards, and compile a list of the industrial activities exposed to stormwater. The RMP Rule requires facilities, depending on applicability, to either develop a hazard review or a process hazard analysis. The SPCC Rule requires that regulated facilities develop spill prevention, control and countermeasure plans that include a review of equipment and processes with a reasonable potential for failure.

Compatibility of stored materials with tanks and equipment is required by five EPA regulatory programs – Pesticides Management Regulation, the SPCC Rule, RCRA Generators Regulation, RCRA TSD Regulations, and the UST Rule. Most of the regulatory programs have a

general requirement that tanks or equipment (or tank lining) must be compatible with the stored material. The Pesticides Management Regulation requires compatibility of containers and pesticides stored by referring to and requiring compliance with the DOT Hazardous Materials Packaging Regulations, and also requires that each stationary pesticide container and its appurtenances are resistant to extreme changes in temperature and constructed of materials that are adequately thick to not fail and that are resistant to corrosion, puncture, or cracking. This requirement is included because material incompatibility can result in corrosion, which implicitly requires pesticide storage facilities to incorporate hazard review in order to satisfy the requirement.

Six EPA regulatory programs have a broad requirement to identify engineering or administrative controls or that equipment or containers are to be constructed in accordance with industry codes or standards. Four specific types of engineering or administrative controls were reviewed: general engineering or administrative controls (e.g. temperature control), alarms, inventory management, and overfill prevention. The most commonly required engineering or administrative control is general controls. For example, the RCRA TSD Regulations at 40 CFR part 264 requires that containers holding hazardous waste remain closed during storage, except when it is necessary to add or remove waste, which is a control to prevent discharges. The RCRA Generators Regulation requires large quantity generators to use inventory logs to monitor hazardous waste. The UST Rule requires that owners or operators monitor hazardous substance transfer between tanks to avoid overfilling or spills. These forms of engineering or administrative controls may prevent discharges.

c. Mechanical integrity

Eight regulations include requirements for facilities to maintain mechanical integrity of equipment critical for safe operation:

- MSGP for Industrial Stormwater;
- RMP Rule;
- SPCC Rule;
- Pesticide Management Regulation;
- RCRA Generators Regulation;
- RCRA TSD Regulations;
- UST Rule; and
- Pulp and Paper Effluent Guidelines.

Five of the reviewed EPA regulations (MSGP for Industrial Stormwater, RMP Rule, SPCC Rule, RCRA TSD Regulations, and Pulp and Paper Effluent Guidelines,) have a general mechanical integrity program element requirement, eight require inspections and testing, and seven require corrective action as a result of these inspections and tests. For example, the 2015 MSGP for Industrial Stormwater addresses a mechanical integrity program element and requires maintenance of non-structural control measures (e.g., ensuring availability of spill response supplies, maintenance training). The SPCC Rule requires that facilities' SPCC Plans include inspections and mechanical integrity.

These regulations vary considerably in scope, such as inspection frequency. For example, the Pulp and Paper Effluent Guidelines require best management practices that involve daily inspection of equipment for leaks for the pulp and paper sector while the 2015 MSGP for Industrial Stormwater requirements emphasize preventative maintenance on equipment that could result in contamination of stormwater. The RMP Rule requires facilities to inspect

equipment at a frequency recommended by the manufacturer or industry standards and also to keep records of inspections.

d. Personnel training

Of the 11 EPA regulations reviewed, eight include training requirements for employees or contractors that could serve to prevent CWA HS discharges:

- MSGP for Industrial Stormwater;
- RMP Rule;
- SPCC Rule;
- Pesticide Worker Protection Standard;
- RCRA Generators Regulation;
- RCRA TSD Regulations;
- UST Rule; and
- Pulp and Paper Effluent Guidelines.

These regulations frequently outline prescribed content that must be covered in the employee and/or contractor training. These training programs typically require training related to safe operation of equipment as well as emergency response procedures when a spill occurs. For example, the RCRA TSD and Generators Regulations require that facility personnel are trained in hazardous waste management procedures, including equipment monitoring, automatic waste feed cut-off systems, alarm systems, response to fires or explosions, response to ground-water contamination incidents, and emergency shutdown of operations. Similarly, the Pesticide Worker Protection Standard requires training for pesticide handlers to include safety requirements for handling, transporting, storing, and disposing of pesticides, including general procedures for spill cleanup. The MSGP for Industrial Stormwater (2015) has a general requirement for permit

holders to develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases.

Seven of the eight EPA regulations reviewed specifically for personnel training also include a requirement specific to refresher training. Most programs require that employees receive a review or refresher training at least annually. For example, the RMP Rule requires that refresher training is completed every three years.

e. Incident investigations

Three EPA regulations include an incident investigation program element:

- Pulp and Paper Effluent Guidelines;
- SPCC Rule; and
- the RMP Rule.

These three EPA regulations that include an incident investigation program element require facilities to determine the cause of an incident. The SPCC Rule requires that facilities undertake an incident investigation and submit a report within 60 days if they discharged 1,000 U.S. gallons of oil or more in a single discharge or more than 42 U.S. gallons of oil in each of two discharges. This incident investigation must include an analysis of the cause of the discharge, corrective action taken, and additional preventive measures that would minimize the possibility of recurrence. The RMP Rule requires that incident investigations are initiated within 48 hours of an accidental release and include factors that contributed to the incident as well as recommendations resulting from the investigation. Finally, the Pulp and Paper Effluent Guidelines require that mills conduct an incident investigation after a spill and generate a report that identifies changes in operations and equipment, as necessary to prevent recurrence.

f. Compliance audits

Of the 11 EPA regulations reviewed, the RMP rule is the only one that requires compliance audits. The RMP Rule requires owners or operators of stationary sources with regulated chemicals to evaluate their compliance with the RMP Rule every three years. If they find areas of deficiency, they must determine and document an appropriate response and correct the deficiency.

g. Secondary containment

Seven EPA regulations were found to contain secondary containment provisions:

- MSGP for Industrial Stormwater;
- SPCC Rule;
- Pesticide Management Regulation;
- RCRA Generators Regulation;
- RCRA TSD Regulations;
- UST Rule; and
- Pulp and Paper Effluent Guidelines.

These seven EPA regulations require secondary containment for equipment in order to prevent discharges to jurisdictional waters. Only one regulation, SPCC Rule, allows for active or passive secondary containment. Another four of the seven regulations – MSGP for Industrial Stormwater, SPCC Rule, RCRA TSD Regulations, and Pulp and Paper Effluent Guidelines – allow an alternative to containment to be used to prevent released material from reaching water. For example, MSGP for Industrial Stormwater (2015) allows for a “similarly effective means designed to prevent the discharge of pollutants.”

EPA regulations reviewed vary in their standards for the required secondary containment. For example, RCRA TSD regulations require that secondary containment include at least one of

the following: a liner (external to the tank); a vault; a double-walled tank; or an equivalent device as approved by the Regional Administrator. Comparatively, the SPCC Rule requires onshore facilities to use at least one of the following: dikes, berms, or retaining walls sufficiently impervious to contain oil; curbing or drip pans; sumps and collection systems; culverting, gutters, or other drainage systems; weirs, booms, or other barriers; spill diversion ponds; retention ponds; or sorbent materials. The SPCC Rule requires offshore facilities to use curbing or drip pans or sumps and collection systems.

h. Emergency response plan

Eight EPA regulations include requirements for facilities to develop an emergency response plan or at least one of the sub-elements of that program element:

- MSGP for Industrial Stormwater;
- RMP Rule;
- SPCC Rule;
- Pesticide Worker Protection Standard;
- RCRA Generators Regulation;
- RCRA TSD Regulations;
- UST Rule; and
- EPCRA Planning Rule.

These eight EPA regulations require either the emergency response program element or at least one of its sub-elements. Of these, four generally require emergency response plans for discharges or accidental releases – RMP Rule, SPCC Rule, RCRA Generators Regulation, and RCRA TSD Regulations. Both RCRA regulations require that facilities develop contingency plans, which describes the actions that must be taken in response to unplanned release of

hazardous waste. The SPCC Rule requires that in addition to spill prevention, facilities must include certain response plan elements to assist with a responding to an oil discharge. The RMP Rule requires facilities to develop an emergency response plan for accidental release.

Seven of the eight EPA regulations reviewed for the emergency response plan element require that facilities plan immediate actions in the event of a discharge. For example, the MSGP for Industrial Stormwater regulation requires permitted facilities to develop plans for effective response to spills, including procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases and to execute such procedures as soon as possible. The RMP Plan requires the emergency response plan to include immediate procedures and measures for emergency response after an accident. Four of the reviewed EPA programs also include procedures to ensure personnel safety, such as evacuation. RCRA Generators and TSD Regulations both require evacuation plans for personnel, while the Pesticide Worker Protection Standard requires that employers provide emergency assistance for handlers that have experienced a potential pesticide exposure.

Notification procedures are also frequently addressed by the reviewed EPA regulatory programs. Seven of these EPA regulations have requirements to notify government or local communities about spills. For example, the UST Rule requires owners and operators to notify the implementing agency within 24 hours of a spill. Similarly, the EPCRA Planning Rule requires facilities to make an immediate notification to EPA, as soon as practical, and a written follow-up emergency notification. The RMP Rule requires that emergency response plans include procedures for informing the public and local emergency response agencies about accidental releases.

The remaining sub-elements identified for emergency response planning are addressed by half or less than half of the reviewed EPA regulations. Three programs require medical information, including the RMP Rule which requires documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures. Four programs require facilities to designate an emergency response coordinator, including the SPCC Rule which requires the plan to provide a phone number for the facility response coordinator. One program requires facilities to describe information about downstream receptors that may be affected by a discharge. For example, the RMP Rule requires that facilities describe environmental receptors within a calculated distance from the point of release.

i. Coordination of emergency response program with state/local responders

Four EPA regulations require facilities to coordinate an emergency response program with state and/or local responders:

- RMP Rule;
- RCRA Generators Regulation;
- RCRA TSD Regulations;
- EPCRA Planning Rule.

Each EPA regulatory program requires facilities to make arrangements with local responders to prepare for an emergency. The RMP Rule mandates that facilities establish an arrangement with public emergency responders to not enter an emergency area except as arranged with the emergency contact indicated in the RMP. The two RCRA rules mandate a coordinated effort with local police, fire, hospital, and other emergency personnel, wherein potential responders understand which specific police/fire departments have primary authority and are familiar with the layout and activity of the facility and the properties of hazardous waste

being handled. Unlike the RCRA regulations and RMP Rule, the EPCRA Planning Rule does not require formal arrangements to be made with state and local responders; EPCRA mandates the sharing of information with local emergency response personnel.

4. CWA HS subject to EPA and other Federal regulatory requirements

EPA further analyzed the existing Federal regulatory programs to determine whether the most frequently discharged CWA HS listed in Table 2 are subject to existing regulatory requirements (Table 6). However, it is important to note that the applicability criteria for some of the regulatory programs do not rely solely on chemical identity, but include other factors (e.g., whether the substance is a waste, the industrial category of the facility); there may be additional regulatory requirements applicable to the identified CWA HS that this analysis has not identified. Thus, in cases where applicability could not be assessed with relative certainty based on chemical identity, the existing regulation was not included in Table 6. Furthermore, the list of CWA HS and/or the criteria for listing or distinguishing hazards between CWA HS is outside the scope of this action, as well as differentiating requirements based on such consideration.

Table 6 - Most Frequently Discharged CWA HS and Relevant Federal Regulations

CWA HS	Relevant Regulations
PCBs (CAS No. 1336-36-3)	NPDES MSGP for Industrial Stormwater (Toxic Pollutant) SPCC Rule (commonly mixed with transformer oil) UST Rule EPCRA Regulations OSHA Regulations ^a PHMSA Hazardous Material Regulations
Sulfuric Acid (CAS No. 7664-93-9)	NPDES MSGP for Industrial Stormwater RMP Rule UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Sodium Hydroxide (CAS No. 1310-73-2)	NPDES MSGP for Industrial Stormwater UST Rule EPCRA Regulations

CWA HS	Relevant Regulations
	OSHA Regulations PHMSA Hazardous Material Regulations
Ammonia (CAS No. 7664-41-7)	NPDES MSGP for Industrial Stormwater RMP Rule UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Benzene (CAS No. 71-43-2)	NPDES MSGP for Industrial Stormwater (Priority/Toxic Pollutant) Pesticide Regulations ^b UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Hydrochloric Acid (CAS No. 7647-01-0)	NPDES MSGP for Industrial Stormwater RMP Rule UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Chlorine (CAS No. 7782-50-5)	NPDES MSGP for Industrial Stormwater RMP Rule UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Sodium Hypochlorite (CAS No. 7681-52-9)	NPDES MSGP for Industrial Stormwater UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Toluene (CAS No. 108-88-3)	NPDES MSGP for Industrial Stormwater (Priority/Toxic Pollutant) UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Phosphoric Acid (CAS No. 7664-38-2)	NPDES MSGP for Industrial Stormwater UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Styrene (CAS No. 100-42-5)	NPDES MSGP for Industrial Stormwater UST Rule EPCRA Regulations OSHA Regulations

CWA HS	Relevant Regulations
	PHMSA Hazardous Material Regulations
Nitric Acid (CAS No. 7697-37-2)	NPDES MSGP for Industrial Stormwater RMP Rule UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
Potassium Hydroxide (CAS No. 1310-58-3)	NPDES MSGP for Industrial Stormwater UST Rule EPCRA Regulations OSHA Regulations PHMSA Hazardous Material Regulations
^a All instances of “OSHA Regulations” indicate that the CWA HS is covered under either EAPs (29 CFR 1910.38), PSM (29 CFR 1910.119), HAZWOPER (29 CFR 1910.120), or HCS (29 CFR 1910.1200). ^b “Pesticide Regulations” indicates that the substance has a commercial use of pesticides.	

Table 6 summarizes relevant regulations for the most commonly discharged CWA HS. However, there are challenges to identifying applicability for certain programs, specifically when regulatory program applicability relies on criteria other than chemical identity. For example, SMCRA regulations and MSHA regulations apply primarily based on industrial activity (i.e., mining). These requirements were not cited in Table 6, although they may apply to some CWA HS present in those industrial activities. Also, not cited in this table are Standards for Generators of Hazardous Waste; or Standards for Treatment, Storage, and Disposal of Hazardous Waste. Their applicability depends on whether a waste is present, and whether that waste meets the regulatory definition of hazardous waste. While not included in Table 6, these regulations apply to CWA HS in certain situations (e.g., when CWA HS are hazardous waste), so EPA considered these regulatory requirements in the analysis of existing regulations.

For other regulatory programs, applicability may depend on other criteria in addition to chemical identity. Requirements for USTs apply to CWA HS when present in UST systems greater than 110 gallons in capacity. PHMSA Hazardous Materials Regulations specify integrity

requirements for packages used to ship hazardous materials, including CWA HS. Therefore, when CWA HS are stored in packages intended for shipment, the packages must meet certain design criteria that may also serve to prevent discharges of CWA HS. These regulatory programs are cited in Table 6, and the complexities of assessing their prevention advantages for CWA HS are discussed in the BID.

Based on the review of NRC reporting data, in conjunction with existing prevention requirements of the regulations included in the analysis, the Agency determined that the majority of identified CWA HS reported discharges to water from non-transportation-related sources have been discharges of chemicals currently subject to discharge or accident prevention regulatory requirements.

C. Conclusions

In the 40 years since CWA section 311(j)(1)(C) was enacted by Congress, multiple statutory and regulatory requirements have been established under different Federal authorities that generally serve to, directly and indirectly, prevent CWA HS discharges. Some states have also established their own discharge prevention provisions relevant to CWA HS. Based on EPA's analysis of the frequency and impacts of reported CWA HS discharges and the existing framework of EPA regulatory programs and implementing regulations, EPA is not proposing additional regulatory requirements at this time.

EPA requests comments on this proposed approach of establishing no new regulatory requirements under the authority of CWA section 311(j)(1)(C). EPA specifically requests comments on the analysis of existing EPA regulations and their applicability to CWA HS for purposes of spill prevention. EPA also requests comments on the analysis of other Federal

regulations that supplement the EPA regulatory program analysis and whether EPA should consider expanding the basis of the proposal to these Federal regulations.

Furthermore, while the analysis of state regulations and industry standards included in the BID do not serve as a basis for this proposal, the Agency requests comments on whether the state regulations and industry standards considered have program elements reflective of those identified as key to prevention.; The Agency also requests comments on whether there are other Federal regulations not considered in the analysis but that may have applicable discharge prevention requirements, as well as whether any of the identified program elements should or should not have been considered. Likewise, the Agency requests comments on whether there may be regulatory gaps in prevention requirements that are not reflected in the analysis. We also request information that may be used to revise or supplement our analysis regarding any facilities, which are using, storing, producing, and/or otherwise handling CWA HS. Please provide any supporting information, including supporting data, with comments.

IV. Alternative regulatory options considered

A. Prevention program

The Agency considered proposing a CWA HS discharge prevention program that would include provisions to address all nine prevention program elements listed in Table 3. Under this option, EPA considered requiring regulated facility owners/operators to develop a written plan with site-specific prevention measures and practices. Regulated facilities would be expected to implement this plan, to maintain and update it as needed, and to make it available for inspection. Under this alternative option, the facilities could take credit for and/or incorporate existing discharge prevention compliance strategies when addressing CWA HS discharge prevention requirements under this program.

A prevention program regulatory option would be designed to reflect all discharge prevention, control and mitigation program elements discussed in this action to prevent and mitigate CWA HS discharges to jurisdictional waters. A prevention program regulatory approach would also include additional administrative program elements, such as requirements to:

- Develop a plan in accordance with good engineering practices;
- Update the plan as operations or equipment changes; and
- Require records documenting compliance with the rule.

Following an analysis of the frequency of CWA HS discharges and the causes and impacts of such discharges, the Agency chose not to propose this approach. Over the 10-year period analyzed (2007-2016), there were a total of 2,491 CWA HS discharges from non-transportation-related sources with 117 of those discharges with reported impacts. This data suggests that the existing framework of regulatory requirements serves to prevent CWA HS discharges.

EPA requests comments on whether to consider this alternative approach and develop a CWA HS prevention program. Comments should include supporting information and data. EPA requests comments on the specific provisions recommended, costs and advantages of such an approach, ways to minimize any regulatory redundancies, and any other information that would support the promulgation of new CWA HS discharge prevention provisions.

B. Targeted prevention requirements

EPA also considered proposing a limited set of requirements designed to prevent CWA HS discharges. This regulatory option could establish targeted requirements under one or more of the nine program elements listed in Table 3. Targeted requirements under several of the program elements could be effective in helping to prevent CWA HS discharges.

To evaluate which requirement(s) might be appropriate, EPA reviewed cause data in the NRC database for past CWA HS discharges, and identified four key program elements that may have addressed the CWA HS discharge causes. A summary of this review is shown in Table 7. The first category of causes, Unknown/Illegal Dumping/Other, consisted of reports for which there was either too little information provided to develop a prevention strategy, or for which additional regulatory requirements would be unlikely to prevent the discharges because the HS was disposed of illegally. For example, there are statutory and regulatory prohibitions in place to prevent CWA HS dumping, and these prohibitions are enforced (see CWA section 311(b)(3) and 40 CFR 117.1(a)). There is no reason to believe that a redundant prohibition on such dumping would alleviate the problem of those who already disregard existing regulations.

EPA identified program elements that could be effective in preventing CWA HS discharges resulting from the other four categories of reported causes. These program elements were considered, both individually and in various combinations, as an alternative regulatory option.

Table 7 - Cause Data for Identified CWA HS Discharges

Reported Cause Category^a	CWA HS Discharges	CWA HS Discharges with Reported Impacts	Program Element that Could Potentially Prevent this Type of Discharge
Unknown/Illegal Dumping/Other	1,357	74	<i>Unknown - not enough information</i> <i>None - illegal dumping violates current regulations</i>
Equipment Failure	563	17	Hazard Review Mechanical Integrity Secondary Containment
Natural Phenomenon	321	4	Hazard Review
Operator Error	204	10	Hazard Review Personnel Training Secondary Containment
Fire, explosion	46	12	Hazard Review Mechanical integrity

Reported Cause Category^a	CWA HS Discharges	CWA HS Discharges with Reported Impacts	Program Element that Could Potentially Prevent this Type of Discharge
			Personnel Training
TOTAL	2,491	117	
^a EPA used NRC incident descriptions to categorize the incident cause.			

1. Hazard review

Approximately 46 percent of the identified CWA HS discharges from 2007 to 2016 were reportedly due to equipment failure, a natural phenomenon, operator error, or fire/explosion. These causes were all identified as potentially addressed by a hazard review. A requirement to identify potential hazards, including, for example, process hazards, engineering and administrative controls, and human factors, could help prevent CWA HS discharges. However, establishing new requirements for hazard reviews may provide only incremental advantages, as the hazard review program element was identified in seven of the eight EPA regulatory programs and in all four of the other Federal regulations reviewed.

2. Mechanical integrity

Nearly 23 percent of the identified 2,491 CWA HS discharges from 2007 to 2016 were reportedly due to equipment failure, which could be addressed in part through preventive maintenance. However, EPA believes additional regulatory requirements would provide minimal prevention advantages, since seven of the eight EPA programs and three of the four other Federal programs analyzed in the existing requirements review already contain some mechanical integrity/preventive maintenance provisions.

3. Personnel training

Approximately 10 percent of the identified 2,491 CWA HS discharges were due to either operator error or fire/explosion, which were both identified as causes that could be reduced by personnel training. Training employees on the proper operation of equipment and discharge prevention measures/procedures could serve to prevent CWA HS discharges due to operator error. However, the value of a personnel training program would depend, in part, on whether proper operating, maintenance, prevention, or response procedures have been developed to train personnel. Personnel training provisions are currently required in seven of the eight EPA programs and three of the four other Federal programs reviewed.

4. Secondary containment

More than 30 percent of the identified 2,491 CWA discharges were due to causes (e.g., equipment failure, operator failure) where secondary containment could have played a role in preventing the discharge to jurisdictional waters. A requirement to construct and maintain appropriate secondary containment (e.g., sized to prevent a CWA HS discharge from impacting jurisdictional waters could be the most generally applicable program element). However, the advantages of adding secondary containment provisions may only be incremental, as at least some type of secondary containment provision is included in six of the eight EPA regulatory programs and three of the four other Federal regulatory programs reviewed.

5. Conclusion

Provisions for any of the four program elements described above, as well as others identified in Table 3, could be included in a targeted regulatory approach. However, these provisions were frequently identified in both the EPA and other Federal regulatory programs reviewed. EPA believes there would be only minimal incremental value in requiring these

provisions in a new regulation. Additionally, the benefits of any of the targeted provisions described above may not justify the associated costs.²⁰ For more information on the potential costs and benefits associated with regulatory options considered for this action, see the economic analysis, “Regulatory Impact Analysis; Clean Water Act Hazardous Substances Discharge Prevention,” available in the docket and the summary of the economic analysis in section V.A. of this action.

EPA requests comments on whether it should adopt a narrowly targeted regulatory approach to prevent CWA HS discharges. Commenters who support targeted prevention requirements should provide information and data that identify which program elements to include and why, the costs and advantages of such an approach, ways to minimize any regulatory redundancies, and any other information that would support the promulgation of new, targeted prevention provisions. Furthermore, EPA requests comments on whether a targeted regulatory approach should allow a facility to substitute alternative prevention measures for specific targeted requirements (e.g., a situation where secondary containment is not practicable, a facility could substitute a separate prevention measure that achieves the same effect).

In summary, the proposal identifies three options the Agency may choose to finalize:

- Establishes no new requirements under the authority of CWA 311(j)(1)(C);
- Requires prevention plans to address the nine program elements discussed; or
- Requires actions under targeted program elements.

EPA requests comments on these three approaches, as well as on other alternatives not specifically identified in this notice. For example, EPA could consider an approach that requires

²⁰Executive Order 12866 (58 FR 51735, October 4, 1993) section 1(a) states that in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

an owner or operator to develop a plan to prevent CWA HS discharges but allows flexibility for the owner or operator to determine what provisions should be incorporated within the plan. The Agency could also consider establishing a prevention program under CWA section 311(j)(1)(C) authority that incorporates existing discharge prevention provisions already established under other statutory authorities. EPA requests comments on alternative approaches.

If the Agency were to finalize an alternative option that establishes a regulatory program, it would apply to facilities producing, storing, processing, using, transferring or otherwise handling CWA HS. EPA would need to establish applicability criteria for the program, and is requesting comments on appropriate applicability criteria or thresholds for such alternatives.

V. Statutory and Executive Order reviews

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to OMB for review, because it raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. Any changes made in response to the OMB recommendations have been documented in the docket.

EPA prepared an economic analysis of the potential costs and benefits associated with regulatory options considered for this action. This analysis, "*Regulatory Impact Analysis; Clean Water Act Hazardous Substances Discharge Prevention*," is available in the docket.

1. Summary of the economic analysis

A regulatory impact analysis (RIA) is included in the record. The RIA considers three alternatives: the proposed no-action approach, a prevention program including provisions under nine program elements, and a targeted approach including four of the program elements. The unit costs of the program elements are derived from similar requirements in other EPA regulatory programs. The number of affected facilities is estimated from the number of facilities subject to EPCRA.

EPA does not attempt to determine the number of potentially regulated facilities currently undertaking various prevention activities in the baseline. Thus, EPA does not estimate total costs per facility, nor does it estimate total program costs across facilities. EPA does calculate the annualized net present value of a wide range of unit compliance costs for each program element over a 10-year analysis period, using 3 percent and 7 percent discount rates, as presented in Tables 8 and 9. Avoided damages, estimated from historical CWA HS discharges, represent the monetized damages. Based on historical incidents reported to the NRC, EPA estimated the total existing level of monetized damages over the 10-year period from 2007 to 2016 to be \$33.1 million in 2016 dollars.

Table 8 - Summary of Unit Costs

Unit Costs						
Type of Cost	Option 1: Proposed Action		Option 2: Prevention Program		Option 3: Targeted Prevention Requirements	
	Total Annualized Unit Costs (2016 \$)		Total Annualized Unit Costs (2016 \$)		Total Annualized Unit Costs (2016 \$)	
	3%	7%	3%	7%	3%	7%
Safety Information (Recurring)	\$0	\$0	\$14-\$25,100	\$15-\$26,700	\$0	\$0
Hazard Review (Recurring)	\$0	\$0	\$19-\$15,900	\$20-\$17,300	\$19-\$15,900	\$20-\$17,300
Mechanical Integrity (Initial and Recurring)	\$0	\$0	\$348-\$98,800	\$349-\$99,400	\$348-\$98,800	\$349-\$99,400
Personnel Training (Recurring)	\$0	\$0	\$42-\$69,100	\$44-\$73,400	\$42-\$69,100	\$44-\$73,400
Incident Investigations (Recurring)	\$0	\$0	\$40-\$14,600	\$42-\$15,300	\$0	\$0
Compliance Audits (Recurring)	\$0	\$0	\$46-\$10,800	\$45-\$10,600	\$0	\$0
Secondary Containment (Initial)	\$0	\$0	\$3,000-\$43,100	\$3,570-\$51,200	\$3,000-\$43,100	\$3,570-\$51,200
Emergency Response Plan, ERP) (Initial)	\$0	\$0	\$770	\$914	\$0	\$0
Coordination of ERP with State and Local Responders (Initial)	\$0	\$0	Included in cost of ERP	Included in cost of ERP	\$0	\$0

Table 9 - Summary of Monetized Damages

Monetized Damages			
Impact Category	Impact	Average Annual Cases	Average Annual Damages (millions, 2016\$)
Human Health	Injuries (w/o hospitalizations)	1.2	\$0.001
	Hospitalizations	4.1	\$0.2
	Fatalities	0.3	\$3.1
Other	Evacuations	211.9	\$0.04
	Sheltering-in-Place	n.e.	n.e.
	Waterway Closures	n.e.	n.e.
	Water Supply Contamination	n.e.	n.e.
	Environmental Impacts	n.e.	n.e.
	Lost Productivity	n.e.	n.e.
	Emergency Response Costs	n.e.	n.e.
	Transaction Costs	n.e.	n.e.
	Property Value Impacts*	n.e.	n.e.
Total		217.5	\$3.3
n.e. = not estimated.			
*Property value impacts overlap with human health and other impact categories.			

EPA believes the benefits would not justify the costs in any alternative other than the proposed alternative.²¹ The benefits of the provisions are to reduce the likelihood and severity of CWA hazardous substance discharges and their associated impacts on human health and the environment. Table 9 gives estimates of baseline damages from hazardous substance discharges. Annualized damages are estimated as \$3.3 million (2016\$) and represent human health impacts and evacuations. Nonmonetized baseline damages include impacts such as shelter-in-place events, waterway closures, and lost productivity. The estimated annualized unit costs of proposed provisions vary widely, from less than \$100 to tens of thousands of dollars (Table 8). However, existing regulatory programs already require many of the prevention and mitigation actions proposed by Options 2 and 3. Even a robust regulatory program where none existed before would not be expected to completely eliminate all risk.

Since the proposed alternative establishes no new regulatory requirements, it neither imposes incremental costs nor provides incremental environmental protection benefits.

2. Estimating universe of potentially regulated facilities

a. Identifying facilities with CWA HS

To estimate the universe of facilities that would potentially be subject to a rule preventing CWA HS discharges, EPA first estimated the number of facilities with CWA HS onsite. Information in EPCRA Tier II reports was used to identify facilities with CWA HS onsite, because these reports contain information about many chemicals, of which CWA HS are a subset. EPA reviewed Tier II reports submitted in 16 states and extrapolated the data nationally based on NAICS codes and United States Census data. EPA estimates there are approximately

²¹ Under Executive Order 12866 (58 FR 51735, October 4, 1993), section 1(b)(6), each agency shall assess both the costs and benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.

108,000 potentially affected facilities nationally. For additional details on this methodology, alternatives considered, and the results, please see Section 3 and Appendix B of the RIA available in the docket for this action.²²

b. Proximity to jurisdictional waters

EPA did not identify an appropriate method to quantify those facilities that would not have the potential to discharge to jurisdictional waters for this action. To estimate the universe of potentially subject facilities, EPA took a conservative approach and assumed that all CWA HS facilities have the potential to discharge CWA HS to jurisdictional waters.

c. Data limitations

The estimate of potentially regulated facilities has several uncertainties. First, due to the wide range of trade names used for many chemicals and chemical mixtures, it was unclear whether approximately 20 percent of the facilities in the Tier II reports reviewed had a CWA HS onsite. Second, Tier II reports are required for materials present at any one time in an amount greater than or equal to 10,000 pounds, or lower established thresholds for chemicals defined as Extremely Hazardous Substances in 40 CFR part 355, Appendix A. If a proposed regulation were to establish applicability criteria with a higher or lower applicability threshold than those established in 40 CFR part 355, Appendix A, the number of potentially regulated facilities would be impacted. Finally, the extrapolation assumes that the fraction of facilities in each NAICS sector that have CWA HS onsite is the same across all states. As discussed in Section 3.3 of the RIA, alternative extrapolation methodologies were used with reasonably similar results, which provides some confidence that the extrapolation approach is reasonable (i.e., nationwide estimate

²² See *Regulatory Impact Analysis; Clean Water Act Hazardous Substances Discharge Prevention*; Docket ID #: EPA-HQ-OLEM-2018-0024.

of approximately 101,000 facilities based on Tier II data and U.S. population *vs.* approximately 108,000 facilities based on NAICS codes and Census data).

3. Conclusion

EPA seeks comments on the method used to estimate the potential affected universe, including any additional data or information sources that could be used to reduce the uncertainty of the estimate. For any additional information sources, commenters are encouraged to provide information, including where it can be publicly obtained, as well as how the data could improve EPA's current estimate. EPA intends to further refine the estimate of the facilities that could be potentially subject to CWA HS regulatory requirements as additional information is received. EPA is requesting comments on its approach to the economic analysis, including additional sources of information or data to refine the analysis.

B. Executive Order 13771: Reducing Regulation and Controlling Regulatory Costs

This action is not an Executive Order 13771 regulatory or deregulatory action, because this action does not propose any regulatory requirements.

C. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA, because this action does not propose any regulatory requirements.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule

relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the small entities subject to the rule.

This action proposes no regulatory requirements. We have therefore concluded that this action will have no net regulatory burden for all directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175, because this action proposes no regulatory requirements. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks

The EPA interprets Executive Order 13045 as applying to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in Section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

I. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use

This action is not a “significant energy action” because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This action proposes no regulatory requirements.

J. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations

EPA believes that this action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard and imposes no regulatory requirements.

Dated: June 15, 2018.

E. Scott Pruitt,

Administrator.

[FR Doc. 2018-13470 Filed: 6/22/2018 8:45 am; Publication Date: 6/25/2018]